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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/599,042	06/21/2000	Esmail Yousefi	22-0127	7782

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EXAMINER

TRINH, TAN H

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/599,042

Applicant(s)

YOUSEFI ET AL.

Examiner

TAN TRINH

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-11,17-19,23-28,33 and 34 is/are rejected.
- 7) ☒ Claim(s) 2-5,12-16,20-22 and 29-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 2-5, 12-16, 20-22 and 29-32, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for allowance

2. The following is a statement of reasons for the indication of allowable subject matter:

The closest reference of Wright (U.S. Patent No. 6,366,776) and prior art of record fails to teach or suggest, the hopping the downlink beam frame signal between at least two terrestrial cells, as cited in claims 2 and 29. And the step of activating the power is gating signal based on the terrestrial cell to which the downlink beam frame signal is currently hopped, as cited in claims 3 and 30. Also the step of activating the power is gating signal based on a statistical multiplexing estimate of downlink frame utilization, as cited in claims 4 and 31. And step of activating the power gating signal in order to maintain at least one data queue on average approximately at preselected occupancy level, as cited in claims 5 and 32.

In addition, the prior art of record fails to teach or suggest, the power gating circuit of claim 11, comprises a digital modulator passband coupled to a modulator output of the digital modulator, as cited in claim 12. And the switch coupled to the power amplifier, the switch including a feed path selection input; a first feed path coupled to the switch and characterized by a first hop location; and a second feed path coupled to the switch and characterized by a second hop location, as cited in claim 20.

Art Unit: 2684

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6-10, 11, 17-19, 23-28 and 33-34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (U.S. Patent No. 6,366,776).

Regarding claim 1, Wright teaches the method for power gating a downlink beam frame signal (see fig. 1, col. 17, lines 42-43), the method comprising: transmitting (see col. 2, lines 12-14), to form a single frame, at least a first header signal, a first payload signal, a second header signal, and a second payload signal (see fig. 12); Wright further teaches when a power gating signal is active, removing RF power from the frame with no payload (essential overhead only) (see col. 17, lines 42-43) thereby reducing DC power consumption. But Wright teaches fails to show the removing RF power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination.

Art Unit: 2684

However, Wright teaches when a power gating signal is active, removing RF power from the frame with no payload, essential overhead (see col. 17, lines 42-43) and show the frame with the first header signal and first payload signal in combination in fig. 12. This is obvious to removing the first or second header signal and first or second payload signal in combination, that is dependent on the designer of the system to set what header or what pay load he like to be remove power amplifier for that section of frame, Since Wright teaches when a power gating signal is active, removing RF power from the frame with no payload essential overhead.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Wright system with the power gating when frame body would be transmitted in order to reduce power consumption.

Regarding claim 6, Wright teaches the transmitting a first flush signal and a second flush signal, and wherein removing power comprises removing power from at least one of the first header signal, first payload signal, and first flush signal in combination, and the second header signal, second payload signal, and second flush signal in combination (see fig. 12, and col. 18, lines 17-21).

Regarding claim 7, Wright teaches wherein removing power comprises removing power for the first header signal and first pay load signal, the second header signal, and the second payload signal (see col. 17, lines 42-43 and rejection on claim 1 above).

Regarding claim 8, Wright teaches removing power from first payload signal, the second header signal, and the second payload signal (see col. 17, lines 42-43 and rejection on claim 1 above).

Regarding claim 9, Wright teaches removing power from the first header signal, the first payload signal, and the second payload signal (see col. 17, lines 42-43 and rejection on claim 1 above).

Regarding claim 10, Wright teaches the transmitting to form a single frame a first header signal, a first payload signal, a second header signal, a second payload signal, at least one additional header signal, and at least one additional payload signal (see fig. 12); when the power gating signal is active, removing power from at least one of the first header signal and first payload signal in combination, the second header signal and second payload signal in combination, and the additional header signal and the additional payload signal in combination signal (see col. 17, lines 42-43 and rejection on claim 1 above).

Regarding claim 11, Wright teaches the power gating module (see fig. 15, item 176) for power gating a downlink beam frame signal (see fig. 14, col. 49-59), the power gating module comprising: a power amplifier (see, fig. 14, TWTA 186 and 188) for amplifying for transmission frame signals including at least a first header signal, a first payload signal, a second header signal, and a second payload signal (see col. 20, lines 53-59); a power gating circuit coupled to the power amplifier (see fig. 14, item gates 185 and 187) the gating signal (see fig. 14 the gating signal 178), the power gating circuit including a power gate input and responsive to a power

Art Unit: 2684

gating signal to remove power from at least one of the first header signal and first payload signal in combination (see fig. 14, item gates 185 and 187 and the gating signal 178), and the second header signal and second payload signal in combination before amplification by the power amplifier (see col. 20, lines 49 - col. 21, lines 7).

Since Wright teaches the power gating scheduler 176 then generates a first frame type signal if heavily coded blocks are to be used, a second frame type signal if an empty frame is to be formed and a third frame type signal if lightly coded blocks are to be used. Scheduler 176 also generates a gating signal on a conductor 178 if the second frame type signal is generated indicating that an empty frame will be sent. The gating signal deactivates TWTAs 186 and 188 at the appropriate time when the frame body would be transmitted in order to reduce power consumption. The TWTAs include gates 185 and 187 (FIG. 14) which deactivate the TWTAs in response to the gating signal on conductor 178 (see col. 21, lines 1-7). That is obvious to the first header signal and first payload signal in combination and the second header signal and second payload signal in combination before amplification by the power amplifier.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Wright system with the power gating when frame body would be transmitted in order to reduce power consumption.

Regarding claim 17, Wright teaches wherein the power is gating signal is active during the first header signal, the first payload signal, the second header signal, and the second payload signal (see col. 20, lines 61-67 and col. 21, lines 2-4 and see rejection claim 11 above).

Art Unit: 2684

Regarding claim 18, Wright teaches wherein the power is gating signal is active during the first payload signal, the second header signal, and the second payload signal (see col.20, lines 61-67 and col. 21, lines 2-4 and see rejection claim 11 above).

Regarding claim 19, Wright teaches wherein the power is gating signal is active during the first header signal, the first payload signal, and the second payload signal (see col.20, lines 61-67 and col. 21, lines 2-4 and see rejection claim 11 above).

Regarding claim 23, Wright teaches the power gated frame signal (see figs. 14 and 15, col. 20, lines 53-59) comprising: a single frame (see fig. 12, col. 18, lines 16-21) comprising at least a first header signal, a first payload signal, a second header signal, and a second payload signal (see fig. 12), wherein at least one of the first header signal and first payload signal in combination (see fig. 12), and the second header signal and second payload signal in combination is power gated (see fig. 12 and col. 20, lines 55-66). Since Wright teaches the gating the frame (fig. 12), that is obvious to the first header signal and first payload signal in combination and the second header signal and second payload signal in combination.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Wright system with the power gating when frame body would be transmitted in order to reduce power consumption.

Art Unit: 2684

Regarding claim 24, Wright teaches wherein the single frame further comprises at least one additional header signal, and at least one additional payload signal, and wherein at least one of the first header signal and first payload signal in combination, the second header signal and second payload signal in combination, and the additional header signal and the additional payload signal in combination is power gated (see col. 17, lines 42-43 and fig. 12 and col. 20, lines 55-66 and see rejection claim 23 above).

Regarding claim 25, Wright teaches wherein the first header signal, the first payload signal, the second header signal, and the second payload signal are power gated (see fig. 12, col. col. 20, lines 55-66 and see rejection claim 23 above).

Regarding claim 26, Wright teaches wherein the first payload signal, the second header signal, and the second payload signal are power gated (see fig. 12, col. col. 20, lines 55-66 and see rejection claim 23 above).

Regarding claim 27, Wright teaches wherein the first header signal, the first payload signal, and the second payload signal are power gated (see fig. 12, col. col. 20, lines 55-66 and see rejection claim 23 above).

Regarding claims 28 and 34, Wright teaches the method for power gating a downlink beam frame signal (see fig. 1, col. 17, lines 42-43), the method comprising: transmitting (see col. 2, lines 12-14), to form a single frame at least a first header signal, a first payload signal, a

Art Unit: 2684

second header signal, and a second payload signal (see fig. 12); when a power gating signal is active (see col. 17, lines 42-43), removing RF power from at least one of the first header signal and first payload signal, and the second header signal and second payload signal, thereby reducing DC power consumption (see figs. 12, 14 and 15 col. 17, lines 42-43, col. 20, lines 49-67 and col. 21, lines 1-7). Since Wright teaches the gating the frame (fig. 12), that is obvious to the first header signal and first payload signal and the second header signal and second payload signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Wright system with the power gating when frame body would be transmitted in order to reduce power consumption.

Regarding claim 33, Wright teaches the transmitting a first flush signal and a second flush signal, and wherein removing power comprises removing power from at least one of the first header signal, first payload signal, and first flush signal in combination, and the second header signal, second payload signal, and second flush signal in combination (see fig. 12, and col. 18, lines 17-21).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Butler (U.S. Patent No. 6,545,989) discloses transmit gating in a wireless communication system.

Art Unit: 2684

Chen (U.S. Pub. No. 20020064135) discloses method and apparatus for controlling transmission gated a potentially transmission gated or capped communication.

Bremer (U.S. Pub. No. 20030086383) discloses current reduction by receiver linearity adjustment in a communication device.

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (703) 305-5622. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

Tan H. Trinh

Art Unit 2684

September 12, 2003

